



## US EPA OECA CLEAN AIR ACT INSPECTION REPORT

Inspection Dates: April 16 – 18, 2019  
 Inspection Type: Clean Air Act, Partial Compliance Evaluation  
 Company Name: Mewbourne Oil Company  
 Office Location: 4801 Business Park Blvd  
 Hobbs, NM 88240  
 Facility Names: Permian Basin Oil and Gas Production Sites  
 Regulations: SIP, NSPS OOOOa  
 SIC Code: 1311, 1321

### Company Personnel

<b>Ex. 6 PP / Ex. 7(C)</b>	Affiliation	Title	Phone No.
	Mewbourne Oil	VP Operations	903-561-2900
	Mewbourne Oil	General Counsel	903-561-2900
	Price Energy Consultants	Consultant	432-528-2777
	Mewbourne Oil	District Manager	575-390-4816
	Mewbourne Oil	Emissions Technician	575-263-4265
	Mewbourne Oil	Production Superintendent	432-894-9540

### Government Personnel

Name	Affiliation	Title	Phone No.
Cindy Hollenberg	NMED, Air Quality	Inspections Manager	505-476-4356
Daniel Hoyt	US EPA OECA	Inspector	202-564-7898
Prince Nfodzo	US EPA Region 6	Environmental Engineer	214-665-7491
Cary Secrest	US EPA OECA	Inspector	202-564-8661
Christopher Williams	US EPA OECA	Inspector	202-564-7889

EPA Lead Inspector

Signature/Date

\_\_\_\_\_  
Cary Secrest

EPA Inspector

Signature/Date

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Daniel Hoyt

EPA Manager

Signature/Date

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Gregory Fried, Chief, Stationary Source Enforcement Branch

Signature/Date

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Cindy Hollenberg

## 1. Introduction

The United States Environmental Protection Agency (EPA) and the New Mexico Environmental Department (NMED) selected Mewbourne Oil Company for partial Clean Air Act compliance evaluations at its largest oil and gas production sites in the southeast New Mexico Permian Basin, which are located between Hobbs and Carlsbad, New Mexico. On April 11, 2019, Mr. Cary Secrest contacted [Ex. 6 PP / Ex. 7(C)] discuss the upcoming inspections. [Ex. 6 PP / Ex. 7(C)] assured that company personnel would be available for field work during the week of April 15.

### A. Summary of the Facilities

Mewbourne Oil is a privately-owned oil and gas producer in the Permian Basin. Of the company's [Ex. 4 CBI] EPA and NMED selected 21 of its highest producing sites, focusing on those that produce both natural gas and liquids. The government team inspected 11 of those sites during the three days in the field. A separate government team lead by Cynthia Kaleri, Enforcement Officer, EPA Region 6 observed emissions at four additional sites on April 18, 2019 and the results are reported separately by EPA Region 6.

### B. Inspection Opening Conference (Mewbourne Office)

During the opening conference Mewbourne personnel wanted to know if the company was targeting for a particular reason (see, Attachment 3 for attendee list). Mr. Secrest explained that EPA and NMED had selected 5 top producers and had four other teams in the area for the week to conduct SIP and NSPS OOOOa evaluations. He noted that volatile organic compounds (VOC) emissions are the primary focus of the inspections and the team would use optical gas imaging and photoionization detector (PID) gas detection to assess the operation of the sites. Mewbourne personnel also asked if the inspection will result in an enforcement action. Mr. Secrest explained that as inspectors our role is to gather information, not to determine compliance status. In closing Mr. Secrest reviewed EPA's handling of confidential business information (CBI) and requested that Mewbourne inform him if any CBI is obtained by the government team during the inspection. Mewbourne did not claim any CBI during the inspections. The government team departed for the field, escorted by Messrs. Terrell, Price, Buston, and Whetstone.

## 2. Process Overview

Mewbourne's oil and gas sites are similar in layout and include the following types of equipment: one to four vertical heater/treater units, with smaller phase separators and

corresponding vapor recovery units (VRUs); a candlestick flare for control of emissions; a tank battery typically consisting of 750 bbl crude oil and condensate tanks, and produced water tanks; and a larger 1000 bbl skim tank or “gun barrel” tank. The tank battery typically contains from four to nine oil tanks coupled by common vent lines with the produced water tanks. The gun barrel tank provides final separation of oil and water. Vapors from the produced water and oil tanks are routed to a VRU. The gun barrel tanks not controlled. The tanks are protected from over-pressurization by thief hatches at the top, and pressure relief valves, referred to as “Enardo valves” by company personel, on the storage tank closed vent lines. Produced water is pumped offsite via above ground hoses to regional disposal facilities.

### 3. Site Inspections

We conducted our ground-level emissions surveys using the following equipment:

- a. Cary Secrest, ITC Certified Thermographer (I.D. 41167, exp. 4/6/2021) operated an optical gas-imaging (OGI) camera manufactured by FLIR, Model GF320, serial number 444401737. Optical gas imaging (OGI) with FLIR camera recordings of emissions sources were normally conducted first in visible light mode, then high sensitivity mode (HSM) for screening purposes, and then in fully automatic mode (Auto). Mr. Secrest also recorded wind and temperature data using a Kestrel 4500 meter.
- b. Cindy Hollenberg surveyed the sites with a photo-ionization detector manufactured by Rae Systems called the “ppbRae3000,” serial number 594-901619, to confirm that emission plumes contained regulated VOCs including butane and higher molecular weight compounds (PIDs cannot detect methane, ethane, or propane). Concentration measurements are recorded in parts-per-billion (ppb) or parts-per-million (ppm).
- c. Cindy Hollenberg took photographs with a digital camera. See, Attachments 1 and 2.

Daniel Hoyt recorded field notes and conferred with Mewbourne personnel on the engineering aspects of each site.

<b>Site Name</b>	FORTY NINER RIDGE UNIT
<b>Well Lat/Long</b>	32.2843996, -103.8614546
<b>Date/Time</b>	4/16/2019 11:35 to 12:15
<b>Equipment</b>	3 wells, 9 oil tanks, 9 produced water tanks, 1 gun barrel tank
<b>Wind, T (°C)</b>	WNW @ 4 m/s, 27 C
<b>FLIR MOV_</b>	None.
<b>Observations</b>	Wells shut in. OGI-visible emissions noted from uncontrolled gun barrel tank vent. Odors noted downwind from tanks, up to 296 ppb measured with PID. No OGI-visible emissions detected from flare, or flame noted coming from flare. Staining noted on gun barrel tank. Exterior of gun barrel tank apparently stained with oil (photo: Attachment 2, pg 2)

<b>Site Name</b>	FNR 17 20 B2IP FEDERAL COM/FNR 17-20 B21P Fed Com 1H B31P2H Battery
<b>Well Lat/Long</b>	32.3041247, -103.8988009
<b>Date/Time</b>	4/16/2019 12:38 to 13:52
<b>Equipment</b>	3 wells, 6 oil tanks, 5 produced water tanks, 1 gun barrel tank, 2 sales line compressors.
<b>Wind, T (°C)</b>	NNW @ 4 m/s, 29 C
<b>FLIR MOV_</b>	0356. Gun barrel tank vent. 0358. Ajax sales line compressor emissions. 0359. Enardo pressure relief valve (PRV) intermittent emissions. 0360. Gun barrel tank vent. 0361. Possible thief hatch emissions.
<b>Observations</b>	Well pad sign says FNR Fed Unit #1H. Adjacent battery (1 well, 1 gun barrel tank, 2 produced water tanks, 3 oil tanks, 1 flare) shut in, flare not burning. Two Ajax sales line compressors emitted VOCs (OGI-visible, and up to 27 ppm with PID). At least two PRVs on the closed vent system (CVS) emitted OGI-visible VOCs above a produced water tank and oil tank. Staining noted on four tanks. OGI-visible emissions noted from uncontrolled gun barrel tank vent. VRU not operating "wouldn't start". Odors noted, especially near compressors. Exterior of gun barrel tank apparently stained with product. (photo: Attachment 2, pg 3)

<b>Site Name</b>	SPEEDWAGON 27 WOPA FEE/Speedwagon 27 Fee Battery
<b>Well Lat/Long</b>	32.2679118, -104.0669549
<b>Date/Time</b>	4/16/2019, 15:05 to 15:30
<b>Equipment</b>	1 well, 4 oil tanks, 4 produced water tanks, 1 gun barrel tank
<b>Wind, T (°C)</b>	SW @ 3.1 m/s, 30 C
<b>FLIR MOV_</b>	None.
<b>Observations</b>	Well shut in. Flare cold, no emissions detected with OGI, no flame visible.

<b>Site Name</b>	YARDBIRDS 3 WOAP FEE
<b>Well Lat/Long</b>	32.2534998, -104.0670969
<b>Date/Time</b>	4/17/2019, 10:18 to 11:25
<b>Equipment</b>	2 well, 6 oil tanks, 6 produced water tanks, 1 gun barrel tank
<b>Wind, T (°C)</b>	W to SW @ 5 m/s, 23 C
<b>FLIR MOV_</b>	0362. Gun barrel tank vent. 0363. Gun barrel tank vent. 0364. Gen barrel tank vent, Enardo PRV (after equalization line was closed) 0365. Same as 0364. 0366. Same as 0364.

<b>Observations</b>	One of two wells operating. OGI-visible emissions from Enardo PRVs on CVS above oil tank even after VRU started and had been running for four minutes. OGI-visible emissions noted from uncontrolled gun barrel tank vent. Odors noted downwind from tanks (up to 663 ppb with PID). After equalization line valves between tanks were closed (overflow lines), OGI-visible emissions from gun barrel tank vent appeared to decrease and emissions from PRV appeared to increase. No visible flame at flare, very small amount of emissions/heat detected with OGI (possibly pilot), no visible flame. Exterior of oil tank apparently stained with product. (photo: Attachment 2, pg 7)
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<b>Site Name</b>	QUEEN 23 24 WOOP FEDERAL COM/Queen 23 24 Fed Com Battery
<b>Well Lat/Long</b>	32.1978855, -104.0592729
<b>Date/Time</b>	4/17/2019, 11:48 to 12:56
<b>Equipment</b>	2 wells, 6 oil tanks, 6 produced water tanks, 1 gun barrel tank
<b>Wind, T (°C)</b>	SW @ 8 m/s, 23 C
<b>FLIR MOV_</b>	0367. Wellhead control valve OGI-visible emissions, repaired on-site. 0368. Thief hatches. 0369. Recorded in error. No subject. 0370. Gun barrel thief hatch OGI-visible emissions. 0371. Gun barrel tank vent.
<b>Observations</b>	Heaters in heater-treaters not running. Valve controller OGI-visible emissions on a valve, on the wellhead identified as #1HWO (hissing noise and odors detected). VRU running, shut down at 12:06 pm. OGI-visible emissions noted from uncontrolled gun barrel tank vent (intermittent) and gun barrel Tank thief hatch (constant). Odors detected downwind from tanks and separators (up to 108 ppb detected with PID). Attempted to climb tanks, but PID spiked up to 413 ppb on stairs up to tanks, decided not to climb tanks. Oil noted on ground inside tank containment area (photo: Attachment 2, pg 8). Ajax compressor (for gas produced at heater treaters), OGI-visible emissions detected, up to 1,775 ppb from small valve.

<b>Site Name</b>	HOSS 2 11 W2BO FEDERAL COM/Hoss 2 11 Federal Com Battery
<b>Well Lat/Long</b>	32.1658736, -104.0543736
<b>Date/Time</b>	4/17/2019, 14:03 to 15:00
<b>Equipment</b>	2 wells, 6 oil tanks, 6 produced water tanks, 2 gun barrel tanks
<b>Wind, T (°C)</b>	WSW @ 6 m/s, 25 C
<b>FLIR MOV_</b>	0372. Gun barrel tank vent. 0373. Thief hatches and Enardo PRVs on CVS.
<b>Observations</b>	One of two wells operating. OGI-visible emissions from Enardo PRV on CVS above produced water tank. OGI-visible emissions noted from uncontrolled gun barrel tank vent and produced water tank (possibly thief hatch). Flare pilot burning (detected with OGI), but no visible flame. Odors noted downwind from

	tanks (up to 362 ppb detected with PID). Oil noted on ground inside tank containment area (photo: Attachment 2, pg 9). Lease agreement custody transfer (LACT) pumps noted on site, pumps oil from tanks into pipeline, were not running while on site.
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<b>Site Name</b>	MAD DOG 26 B3PA STATE/Mad Dog 26 MD State Com 1H Battery
<b>Well Lat/Long</b>	32.2681732, -103.4336906
<b>Date/Time</b>	4/18/2019, 10:45 to 11:30.
<b>Equipment</b>	4 wells, 8 oil tanks, 4 produced water tanks, no gun barrel tank
<b>Wind, T (°C)</b>	N @ 3 m/s, 17.5 C
<b>FLIR MOV_</b>	None.
<b>Observations</b>	OGI-visible emissions detected around separator pneumatics and valves, with odors detected (up to 23 ppm with PID). Flare flame visible intermittently. LACT running during visit, VRU not running. No emissions observed from tanks or controlled vent system. Only one heater of three heater-treaters operating.

<b>Site Name</b>	TORO 36 B3CN STATE/Toro 36 B2CN State 1H Battery
<b>Well Lat/Long</b>	32.2675333, -103.4249204
<b>Date/Time</b>	4/18/2019, 11:37 to 12:30
<b>Equipment</b>	4 wells, 6 oil tanks, 5 produced water tanks, 1 gun barrel tank
<b>Wind, T (°C)</b>	Not noted.
<b>FLIR MOV_</b>	0374. Gun barrel thief hatch. 0375. Gun barrel thief hatch and tank vent. 0376. Thief hatches.
<b>Observations</b>	OGI-visible emissions from gun barrel tank vent and thief hatches, and at least two oil tanks, odors and elevated PID downwind from tanks (410 ppb), on catwalk downwind from gun barrel tank thief hatch during dump (2800 ppb). During dump to gun barrel tank, thief hatch made hissing noise, looked like steam coming from gun barrel tank thief hatch. Intermittent emissions from at least two oil tanks thief hatches (100 ppm at Tank 20002 thief hatch and 28 ppm at Tank 20001 thief hatch). OGI-visible emissions from gun barrel thief hatch (100 ppm). VRU running intermittently. Oil observed on ground inside tank containment area and oil tank exterior apparently stained with product (photo, Attachment 2, pg 10). Visible flame at flare noted.

<b>Site Name</b>	TORO 36 B3AP STATE/Toro 36 B3AP State 1H battery
<b>Well Lat/Long</b>	32.2673794, 103.4168585
<b>Date/Time</b>	4/18/2019, 12:32 to 13:23
<b>Equipment</b>	2 wells, 6 oil tanks, 5 produced water tanks, 1 gun barrel tank, 1 compressor
<b>Wind, T (°C)</b>	Not noted.

<b>FLIR MOV_</b>	0377. Gun barrel tank vent, thief hatches, Enardo PRVs on CVS. 0378. Gun barrel tank stratification, oil level in tank. 0379. No significant trailing VOC plum from candlestick flare.
<b>Observations</b>	Both heater-treaters not running heaters. Multiple intermittent thief hatch OGI-visible emissions. Gun barrel tank vent emissions noted. Visible flame at flare noted. Odors noted downwind from flare and artificial lift compressor, possibly coming from off site (up to 200 ppb with PID). Oil on the ground in tank containment area (photo, Attachment 2, pg 12).

<b>Site Name</b>	PRONGHORN 15 B3DM FEDERAL COM/Pronghorn 15 B3CN Fed Com 1H Battery
<b>Well Lat/Long</b>	32.3112552, -103.4645618
<b>Date/Time</b>	4/18/2019 13:40 to 14:18
<b>Equipment</b>	2 wells, 8 oil tanks, 7 produced water tanks, 1 gun barrel tank
<b>Wind, T (°C)</b>	NE @ 2.5 m/s, 21 C
<b>FLIR MOV_</b>	0380. Gun barrel tank vent and Enardo PRVs on CVS (oil tank side). 0381. Enardo PRVs on CVS (oil tank side).
<b>Observations</b>	One heater-treater not running heater. OGI-visible emissions from gun barrel tank vent and Enardo PRV on closed vent system above oil tank T17382, both intermittent. Odors detected downwind from tanks. Staining noted on PRV where emissions were detected. VRU initially not running, then it turned on. OGI-visible emissions from pneumatic controllers/valves on the horizontal separator identified as "DM" and the "DM" heater-treater effluent liquid line. Visible flame noted at flare.

<b>e Name</b>	CABRA NINO 11 B3MD STATE COM/Cabra Nino 11 B3MD State Com 1H Battery
<b>Well Lat/Long</b>	32.3997143, -103.4464116
<b>Date/Time</b>	4/18/2019, 14:45 to 16:10
<b>Equipment</b>	2 wells, 5 oil tanks, 4 produced water tanks, 1 gun barrel tank, compressor.
<b>Wind, T (°C)</b>	NNE at 3 m/s, 22 C.
<b>FLIR MOV_</b>	0382. Gun barrel tank vent, Enardo valves on CVS, possible thief hatches (on produced water tank side). 0383. Enardo PRVs on CVS, produced water side. 0384. Pneumatic line on separator control valve. 0385. Pneumatic line on separator control valve. 0386. Control valve on artificial lift compressor.
<b>Observations</b>	OGI-visible emissions detected from tanks, gun barrel tank vent (intermittent) and Enardo PRV on closed vent system (oil side constant emissions). Both heater-treaters not running heaters. OGI-visible emissions detected at pneumatic control valve near heater treater (up to 53 ppm with PID) and at Ajax

	artificial lift compressor (47 ppm at emissions point, and 422 ppb downwind from compressor with PID). Odors detected near control valve, and downwind from tanks (up to 2690 ppb with PID). Flare had visible flame. Exterior of produced water tank apparently stained with hydrocarbon (photo: Attachment 2, pg 15).
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#### 4. Closing Conference

The closing conference was held in the conference room of the Fairfield Inn Hotel, in Hobbs, NM (see, Attachment 3 for attendee list). During the conference, the government team noted that the primary area of concern is the VOC emissions from gun barrel tanks, thief hatches, and Enardo valves. Mr. Hoyt noted that one of the facilities visited did not appear to have received an approved notice of intent (NOI) to construct. Government team personnel informed Mewbourne that the inspection reports will be provided to the company within 60 days. Mewbourne personnel downloaded the FLIR video files and pictures.

**Ex. 7(E)**

\* The number of thief hatches is assumed to equal the number of tanks; the population emission rate as observed from ground level was 9%. The total number of Enardo valves was not counted during the inspection.

**Attachments**

1. Log of photographs
2. Selected photographs
3. Opening/Closing Conferences attendee list